AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A device, for calculating a total amount of toner consumed from a toner cartridge, ~~the device~~ comprising:

a counter, ~~which obtains~~ determining a first amount of the toner ~~, which is~~ consumed in a first region, of a recording medium, ~~at~~ in which a toner image is formed;

~~a timer, which clocks a time period of which the toner cartridge is in operation;~~

a storage, ~~which stores in advance~~storing an offset value ~~second amount of the toner, which is consumed~~ indicating a consumption rate of toner in a second region, of the recording medium, in~~at~~ which the toner image is not formed; ~~, the second amount being associated with the time period;~~ and

a calculator, ~~which~~ determining a second amount of toner consumed, based on said offset value, and determining a total amount of toner consumed based on the first and second amounts. ~~adds the second amount to the first amount in accordance with the clocked time period, in order to obtain the total amount.~~

2. (currently amended): A device, for calculating a total amount of toner consumed from a toner cartridge, ~~the device~~ comprising:

a counter, ~~which obtains~~ determining a first amount of the toner~~,~~ which is consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

a storage, ~~which stores in advance~~storing a value related to a second amount of the toner~~, which is~~ consumed by forming a test image; and

a calculator, ~~which adds~~determining the second amount of toner consumed, based on said value stored in the storage, and determining the total amount of toner based on the ~~second amount to the~~ first and second amounts.~~, in order to obtain the total amount.~~

3. (currently amended): A device, for calculating a total amount of toner consumed from a toner cartridge, ~~the device~~ comprising:

a counter, ~~which~~determining ~~obtains~~ a first amount of the toner~~, which is~~ consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

a storage, ~~which stores in advance~~storing a value related to a second amount of the toner~~, which is~~ consumed ~~for a purpose~~ other than in the formation of the toner image on the recording medium; and

a calculator, ~~which adds~~determining the second amount of toner consumed, based on said value stored in the storage, and determining a total amount of toner consumed based on the ~~second amount to the~~ first and second amounts.~~, in order to obtain the total amount.~~

4. (currently amended): The device as set forth in claim 3, wherein the second amount of the toner includes an amount of toner used for forming a registration mark for placing the recording medium at a predetermined position.

5. (currently amended): The device as set forth in claim 3, wherein the second amount of the toner includes an amount of toner used for stabilizing vibrations of a cleaning blade abutted against a toner carrier.

6. (currently amended): A device for calculating a total amount of toner consumed from a toner cartridge, the device comprising:

a counter, ~~which obtains~~ determining a first amount of the toner~~, which is~~ consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

a first storage, ~~which stores in advance~~storing a first value related to a second amount of the toner~~, which is~~ consumed for forming a first test image;

a second storage, ~~which stores in advance~~storing a second value related to a third amount of the toner~~, which is~~ consumed for forming a second test image; and

a calculator, determining the second amount of toner consumed based on said first value, determining the third amount of toner consumed based on said second value, and determining the total amount of toner consumed based on said ~~which adds the second amount and the third amount to the~~ first, ~~amount~~second and third amounts.~~, in order to obtain the total amount.~~

7. (original): The device as set forth in claim 6, wherein the first test image is a gradation image, and the second test image includes at least a solid image.

8. (original): The device as set forth in claim 6, wherein:

the first storage is provided in a first controller which receives an image signal from an external device; and

the second storage is provided in a second controller which controls the formation of the toner image based on an instruction from the first controller.

9. (original): The device as set forth in any one of claims 1 to 3, wherein:

a plurality of colors of toner are used to form the toner image; and

the second amount is individually determined for each of the colors.

10. (original): The device as set forth in claim 6, wherein:

a plurality of colors of toner are used to form the toner image; and

the second amount and the third amount are individually determined for each of the colors.

11. (currently amended): A method, for calculating a total amount of toner consumed from a toner cartridge, ~~the method~~ comprising steps of:

determining~~obtaining~~ a first amount of the toner~~, which is~~ consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

~~clocking a time period of which the toner cartridge is in operation;~~

storing ~~in advance~~ an offset value ~~second amount of the toner, which is consumed~~ indicating a consumption rate of toner in a second region of the recording medium at

which the toner image is not formed~~, the second amount being associated with the time period~~;

and

determining a second amount of toner consumed based on said offset value, and

~~adding~~ determining the total amount of toner consumed based on the first and second amounts.~~ to the first amount in accordance with the clocked time period, in order to obtain the total amount.~~

12. (currently amended): A method, for calculating a total amount of toner consumed from a toner cartridge, ~~the method~~ comprising steps of:

~~obtaining~~ determining a first amount of the toner~~, which is~~ consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

storing ~~in advance~~ a value relating to a second amount of the toner~~, which is~~ consumed by forming a test image; and

~~adding~~ determining the second amount of toner consumed based on said stored value and determining the total amount of toner consumed based on the ~~second amount to the~~ first and second amounts.~~, in order to obtain the total amount.~~

13. (currently amended): A method, for calculating a total amount of toner consumed from a toner cartridge, ~~the method~~ comprising steps of:

determining~~obtaining~~ a first amount of the toner~~,~~ which is consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

storing ~~in advance~~ a value related to a second amount of the toner~~, which is~~ consumed ~~for a purpose~~ other than in the formation of the toner image on the recording medium; and

~~adding~~ determining the second amount of toner consumed based on said stored value and determining the total amount of toner consumed based on the ~~second amount to the~~ first and second amounts.~~, in order to obtain the total amount.~~

14. (currently amended): The method as set forth in claim 13, wherein the second amount of the toner includes an amount of toner used for forming a registration mark for placing the recording medium at a predetermined position.

15. (currently amended): The method as set forth in claim 13, wherein the second amount of the toner includes an amount of toner used for stabilizing vibrations of a cleaning blade abutted against a toner carrier.

16. (currently amended): A method for calculating a total amount of toner consumed from a toner cartridge, the method comprising steps of:

determining~~obtaining~~ a first amount of the toner~~, which is~~ consumed in a first region, of a recording medium, in~~at~~ which a toner image is formed;

storing ~~in advance~~ a first value, said first value related to a second amount of the toner~~, which is~~ consumed for forming a first test image;

storing ~~in advance~~ a second value, said second value related to a third amount of the toner~~, which is~~ consumed for forming a second test image; and

~~adding~~ determining the second amount of toner based on said first value, determining said third amount of toner based on said second value, and determining the total amount of toner consumed based upon said first, second and third amounts.~~the second amount and the third amount to the first amount, in order to obtain the total amount.~~

17. (original): The method as set forth in claim 16, wherein the first test image is a gradation image, and the second test image includes at least a solid image.

18. (original): The method as set forth in any one of claims 11 to 13, wherein:

a plurality of colors of toner are used to form the toner image; and

the second amount is individually determined for each of the colors.

19. (original): The method as set forth in claim 16, wherein:

a plurality of colors of toner are used to form the toner image; and

the second amount and the third amount are individually determined for each of the colors.

20. (currently amended): An image forming apparatus, comprising:

the device as set forth in any one of claims 1 to 3 and 6;

a third storage, ~~which stores~~storing a value relating to a remaining amount of the toner in the toner cartridge, the remaining amount is calculated ~~by subtracting the~~based on the determined total amount of toner consumed ~~calculated by the calculator from~~ and an initial amount of the toner in the toner cartridge; and

a judge, which judges a time at which the toner cartridge is replaced, in a case where the remaining amount becomes a predetermined value or less.

21. (original): The image forming apparatus as set forth in claim 20, wherein the predetermined value is selected from a plurality of values one of which is substantially zero.

22. (original): The image forming apparatus as set forth in claim 20, wherein the predetermined value is varied in accordance with a rate of an area of the toner image relative to the recording medium.

23. (original): The image forming apparatus as set forth in claim 20, wherein the predetermined value is individually determined for each of a plurality of toner cartridges having different volumes.

24. (new): The device as set forth in claim 1, further comprising a timer clocking an operation time period of the toner cartridge;

wherein said offset value is a consumption rate in a specific amount of time; and

wherein said second amount of toner consumed is determined based on said offset value and said operation time period.

25. (new): The method of claim 11, further comprising clocking an operation time period of the toner cartridge;

wherein said offset value is a consumption rate of toner consumed in a specific amount of time and the second amount of toner consumed is determined based on said offset value and said operation time period.